



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/761,539	01/16/2001	William J. Dally	2789.2010-000	5876
24319	7590	07/01/2005	EXAMINER	
LSI LOGIC CORPORATION 1621 BARBER LANE MS: D-106 MILPITAS, CA 95035			CHANG, RICHARD	
			ART UNIT	PAPER NUMBER
			2663	

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/761,539	<b>Applicant(s)</b> DALLY, WILLIAM J.	
	<b>Examiner</b> Richard Chang	<b>Art Unit</b> 2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 December 2004.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,8,9,13,14,26 and 27 is/are rejected.
- 7) ☒ Claim(s) 2-7,10-12 and 15-25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

1. Applicant's arguments with respect to claims 1-27 have been fully considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 8-9, 13-14 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over US patent No. 6,778,529 ("Field et al.") in view of US patent No. 6,674,752 ("Colizzi et al.") and US patent No. 5,303,077 ("Buttle et al.").

Regarding claims 1, 14 and 27. Field et al. teach a and method for a telecommunications synchronous switch node (time-slot interchanger) for interchanging the order of subframes of data (within an input data frame wherein each 125 microsecond frame period is divided into 256 subframes) comprising of

a global frame clock (a systems clock which is used to derive the 125 microsecond frame pulse for synchronization) (See Fig. 32, Col. 32, lines 12 - 26),

an interchange random access memory (switch memory 656) receiving the input data frame at an input (where the traffic may be directly received at the switch interface

650), out of alignment with the global frame clock (where the switch interface 650 provides the ingress TDM traffic storage independent of the global frame clock) (See Fig. 33, Col. 32, lines 27 - 62).

Field et al. teach substantially all the claimed invention but did not disclose expressly the particular application involving limitations of

“a write address generator which addresses the random access memory to write subframes, out of alignment with the global frame clock, in a received order”; and

“a read address generator which addresses the random access memory to read subframes in interchanged order and aligned to the global frame clock”

Colizzi et al. teach a method and apparatus of switch matrix using independent read and write memory access for time slot interchange such that the memory is noncontiguously addressed and space mapped by the predecoder by storing subframes to the random access memory is controlled by the write address control memory (WCM) out of alignment with the global frame clock, in a received order and reading subframes from the random access memory is controlled by the read address control memory (RCM) in interchanged order and aligned to the global frame clock (See Fig. 4, Col. 5, lines 38-54).

A person of ordinary skill in the art would have been motivated to employ Colizzi et al. in Field et al. in order to obtain telecommunications synchronous time slot interchanging switch and to take advantage of providing a write address control memory (WCM) to store subframes to the random access memory, out of alignment with the global frame clock, in a received order and a read address Control Memory (RCM) to read subframes from the random access memory in interchanged order and aligned to the global frame clock in claims 1, 14 and 27.

The suggestion/motivation to do so would have been to use independent read and write memory access for time slot interchange where storing subframes to the random access memory is controlled by the write address control memory out of alignment with the global frame clock, in a received order and reading subframes from the random access memory is controlled by the read address control memory in interchanged order and aligned to the global frame clock, as suggested by Colizzi et al. in Col. 5, lines 38-54. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Colizzi et al. with Field et al. to obtain the inventions specified in claims 1, 14 and 27.

Regarding claims 8-9, this claim have limitation that is similar to those of claim 1, thus it is rejected with the same rationale applied against claim 1 above.

Regarding claims 13 and 26, in the previous action item 2, Colizzi et al. and Field et al. teach substantially all the claimed invention but did not disclose expressly the particular application involving limitations of

“at least one switch of at least one stage comprising a time-slot interchanger”.

Buttle et al. teach an Optical switch and switching module therefor wherein block 17 in dashed lines enclosing the time slot interchangers and the space switch 13 to indicate such a functional unit (at least one switch of at least one stage comprising a time-slot interchanger); (See Fig. 1, Col. 5, lines 30- 52).

A person of ordinary skill in the art would have been motivated to employ Buttle et al. in Colizzi et al. and Field et al. in order to obtain a time slot interchanger and to

Art Unit: 2663

take advantage of the time slot interchangers and the space switch capable of the subframe interchange in claims 13 and 26.

The suggestion/motivation to do so would have been to accommodate a multi-stage digital cross connect switch and to take advantage of the time slot interchangers and the space switch capable of the subframe interchange, as suggested by Buttle et al in Col. 5, lines 30- 52. At the time the invention was made, therefore, it would have been obvious to one of ordinary skill in the art to which the invention pertains to combine Buttle et al. with Colizzi et al. and Field et al. to obtain the inventions specified in claims 13 and 26.

#### ***Allowable Subject Matter***

4. Claims 2-7, 10-12 and 15-25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if no art rejection can be applied.

#### ***Examiner's Statement of Reasons for Allowance***

5. The following is an examiner's statement of reasons for allowance:

The prior art along or in combination fails to teach or make obvious the following limitations:

"the read address generator transforms a global frame counter to generate the read address" as recited in the dependent claims 2 and 15.

"the predecoder includes at least one  $n$ -to- $(2^{\sup.n-p})$  decoder for some integers  $n$  and  $p$ " as recited in the dependent claim 10.

"the interchanger random access memory comprises three buffers and the local frame counter includes a modulo 3 counter field which selects one of the three buffers" as recited in the dependent claim 20, and

"the input data frames are SONET STS-M frames and the interchange random access memory includes three buffers, each of  $M$  bytes" as recited in the dependent claims 11 and 24.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Chang whose telephone number is (571) 272-3129. The examiner can normally be reached on Monday - Friday from 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2663

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*rk*

rkc

Richard Chang  
Patent Examiner  
Art Unit 2663

*Ricky Ngo*  
RICKY NGO  
PRIMARY EXAMINER

*6/27/05*